

Big Game Inventory in BC

As in the management of any resource – be it household finances or big game populations – knowing how much you have to work with is a critical piece of information. That's why one of the cornerstones of modern wildlife management involves conducting inventories.

British Columbia is lucky enough to have 14 different species of big game, and globally important populations of several of these species occur within the province. Inventory provides key information on current status and trends of wildlife populations including estimates of total population size, sex and age ratios, general assessment of health of individuals, and valuable information on habitat suitability and use. Inventory information also drives management decisions for meeting conservation goals, setting hunting seasons, and allocating between user groups (First Nations, resident hunters, and Guide Outfitters).

While most big game inventories in BC are proposed and coordinated at the regional level, the primary source of funding is provided by a provincially coordinated program known as the Big Game Inventory Fund. In recent years, approximately \$700,000 annually has been provided to the Fund as part of the Land Based Investment Strategy. Proposals are reviewed annually by a technical review committee, and recommendations for funding are made to senior management for final approval.

Conducting big game inventories is not typically an inexpensive undertaking, often involving aerial (typically helicopter) surveys in remote areas. As you might imagine, logistic and financial realities make it virtually impossible to count all individuals within a population in the vast expanses of our province. Many text books and graduate level university courses have been dedicated to the science of conducting wildlife inventories, but generally speaking, two methods are typically used to assess big game populations in BC. The first method involves counting all the individuals in a series of relatively small, randomly chosen sample areas, or blocks, and then expanding that 'critter per unit area' estimate to the total area in which the population occurs. Often, sample areas are categorized into what are considered low, moderate, and high density areas so that estimates can be fine-tuned to account for the unequal distribution that typically occurs across the landscape with wildlife populations. This method works best when the visibility of the target species is high, and/or where it has been well documented what portion of the population within the sample block are being seen using the chosen survey method. Many moose populations in BC are estimated using this "randomized block design" methodology.

The other sample method that is often used involves generating a population "index", which involves collecting data that have been proven to be an accurate reflection of actual population levels. This is often the chosen method for animals that are difficult to observe due to their relatively low density, secretive nature, or for those species that occur in habitats where sightability is poor – such as in coastal forests. Spring deer spotlight counts on Vancouver Island employ this methodology. Logging roads through recent cutovers on deer spring range are driven at night and the number of deer counted to generate a deer per km index of the total population. This has provided a reliable source of information on Island deer populations that has been collected annually for over 45 years.

In addition to total population size estimates, the other key source of information that is collected as part of big game inventories involves data on the ratios of the various sex and age classes in the population. Ratios of juveniles to adult females, and the proportion of various classes of mature males are typically of most interest. These data provide critical information on allowable harvests and insures that critical segments of the population (such as the number of prime breeding males) are not being overharvested.

While any inventory might provide a reliable 'snapshot in time' on the status of a big game population, repeated surveys provide even more valuable trend information that allows wildlife managers to respond to changing populations and either increase or decrease harvest opportunities. Support for ongoing big game inventories insures the conservation of our highly valuable big game resource and provides the information required for scientifically defensible harvest strategies.

Kim Brunt
Big Game Committee Chairman